DIRECTORATE OF AVIATION

Govt. of Chhattisgarh, State Hangar

Phone No: +91 771-2274020 **DRP LINES, POLICE GROUND**
Fax No. : +91 771-2273020 **RAIPUR: 492001,INDIA**

Ref. No: DoA//Eng/Tender/Bow/Jan/ 210/2015/409 **Date:- 31.01.2015**

RE-TENDER NOTICE

The Directorate of Aviation invites offers to supply 15 KL ATF Fuel Bowser/Refueller, Qty.03 for Aviation related activities. Interested manufacturer may submit their quotation with reference to the required Terms & Conditions and technical specifications.

General Terms & Conditions :-

1. Registered OEM who have supplied more than 25 Bowser/ Refuellers only in last ten years as per aviation standard can only apply.
2. Address and contact no. of Govt./Companies to whom Bowsers have been supplied must be given along with work order. Tender application not accompanying list of supply of 25 Bowsers will be rejected.
3. All refueling parts/components are as per international standards/specification.
4. Company is required to commit warranty clause as per applicable market practices. Length of warranty period would be one of the factors for award of contract. Post warranty, AMC clause for next five years on yearly charges basis be indicated.
5. Annual turnover/Balance sheet in last three financial year should not be less than 03(Three) Crores excluding for 2014-2015 (current year).
6. Valid NO DUE Sales Tax Clearance certificate issued by Sales Tax Authorities must be enclosed.
7. Cost of Bowser, terms of payment and delivery time must also be mentioned in the tender Form with attached appendix filled.
8. Bidders are required to fill & sign enclosed "Integrity Pact" on Govt's Rs. 100/- Stamp paper and attach with the quotation. A separate contract with the Govt. will have to be signed on Rs. 1,000/- Stamp paper along with the security deposit of Rs. 25,000/- (Rs. Twenty Five thousand only).
9. Tender Fee Rs.5,000/- (Non-Refundable) shall be paid in the form of DD in favour of "The Director, Directorate of Aviation, Raipur" Payable at Chhattisgarh drawn on any nationalized bank.
10. Refundable Earnest Money Deposit @ 3% of total value of 03 nos of Refuellers must be paid in the form of DD in favour of "The Director, Directorate of Aviation, Raipur" Payable at Chhattisgarh. Bid winner shall get back their EMD after successful delivery of the ordered Refueling vehicles. EMD should be enclosed in Price bid envelop.
11. Lead time for the supply of 15 kl Refuellers, qty 03 nos should not be exceeded 120 days (4 months) along with due approvals from the date of work order.
12. Tender in two sealed envelope system (**1**. TECHNICAL BID containing technical quotation & DD for Tender Fee; **2**. PRICE BID containing Price quote, DD for EMD and AMC cost) must be submitted to **" The Director, Directorate of Aviation, Room No: AD3/9, Mahanadi Bhawan, Mantralaya, Naya Raipur: 492 002"** on 12.02.2015 1500 hrs. Tenders will be opened on 12.02.2015 at 1600 hrs.
13. Fill the enclosed CHECK LIST on company's Letter Head and attach required documents as per compliance of annexure.

Sd./-
Director (Aviation)
Govt. of Chhattisgarh

Annexure - I

I.	**CHASSIS:**	1.	TATA make Engine &Chassis capable of carrying 25 Tons of Load (15 kl Bowser) on moderate hilly terrain under CCOE Standard/approval.
		2.	With ABS & Power Steering.
		3.	Euro-III / BS III Certification.
		4.	Cabin Built with PTO unit fitted.
II.	**ENGINE:**	1.	Power assurance & other suitable features as per CCOE standard /approvals.
III.	**BODY & OTHER FEATURES:**		
	Tank.	1.	Tank Capacity : 15 KL
		2.	Internally Epoxy Coated.
		3.	Externally Polyurethane coated.
		4.	Size: As per CCOE normal standard. 4 compartments of equal size.
		5.	MS 10 SWG sheet thickness or as per CCOE standard.
	Flow rate	1.	Up to 600 Ltr./min.
	Type of Filling	1.	Over wing filling (Un-Pressurized fueling)
		2.	Fueling and De-Fueling system.
	Type of Filter	1.	Filter water separator with 1 micron rating. API specified Filter Monitoring System.
		2.	Suitable for ATF for the rate of 600 Ltrs/min.
	Type of Valve	1.	4 way valve.
	Type of Nozzle	1.	Over wing nozzle, size: 1 to 1&1/2”
	Metering System	1.	Electronic Flow Meter for liquid.
	Tank Qty. Content Gauge	1.	Dial Type (Circular).
	Hose	1.	Length of Hose:- 18 meter with 1&1/2” Dia.
		2.	Suitable for ATF/Aviation Fuel.
		3.	Aviation Hose conforming to (Electrical) API 1529/C.
	Hose Reel	1.	Motorized winding system.
	Tubing/ Pipe Lines	1.	Stainless Steel (Electro Polished)
	Panel	1.	Control panel with all functions
	Brake	1.	Brake Interlock with monitoring panel.
	Colour	1.	Blue and Green (or) combination.
IV.	**FABRICATION:**		
	Canopy Cover	1.	Stain less steel, to cover all mounted equipments.
	Platform	2.	Stain less steel, covering the entire top of the Tank with chequered plate.
	Bottom loading point	3.	Provision of a Recirculation & Bottom loading point at the rear side of the tank along with butterfly valve & ground unit.
	Safety precaution	4.	Electro pneumatic Deadman with Suzi cables.

All other terms & conditions must be followed as given in the web site advertisement.

Annexure - II

SUBJECT: - Supply of 3 nos. of ATF- Refuellers - Capacity 15 KL

Fabrication of Refueller capacity 15 KL with aviation fuelling module as per tender specification including cost of all components, labour, painting including logo etc and installation on suitable chassis & commissioning.

MANDATORY INSTRUCTION:

1. Tank mounting cradle to be located as close to Baffle as possible tank mounting feet attached to chassis frame should be close to cross members.
2. Tank test pressure 0.35 kg/sq.cm (5 psi).
3. Material 3.15 mm thick MS plate.
4. Internal bulk shall be sufficiently stiffened to take care of surge pressure.
5. Calibration as per ISI specification No. 2383-1963 as amended time to time.
6. Electrical wiring as per Rule-71 of Petroleum Rules 2002 as amended time to time.
7. Motor vehicle act/Petroleum Rules to be compiled with.
8. Stability ratio 0.91 not to exceed 1.0.
9. All safety fittings must be from manufacturers approved by CCOE, Nagpur.
10. Tank with manhole & CCOE approved safety fittings.
11. Battery Isolation Switch-300 Amp capacity.
12. Spark arrester (CCOE approved).
13. 2 kg ABC Fire extinguisher, qty.01 in cabin.
14. 10 kg ABC Fire extinguishers, qty.02 must be fitted at the side of Tank.
15. Fire screen to be provided.
16. All relevant safety precautions / regulations to be complied with**.**

Annexure - III

Approved makes for the various Components/Systems **to be used on the Refuellers:**

SR. NO.	COMPONENT	APPROVED MAKES
1	Filter Vessel and elements	
2	Differential Pressure Gauge	
3	Air Eliminator	
6	Over wing Refueling Nozzles with HEPCV	
7	Refueling Hoses (API 1529 Type C with certificates)	
8	Product Pump	
9	Internal Valve with Jet Sensor	
10	In Line Pressure Control Valve	
11	Pneumatically Operated Vent	
12	Pneumatic Systems	
13.	Paint	
14.	Dial Type Gauge on Product tank	
15.	Valves in main product line	
16.	Flow Meter	
17.	Reel Hose Push Button Switches	
18.	Sampling Valves on Filter & Tank Drain	

CHECK & COMPLINCE LIST

This document must be submitted on company's Letter Head.

SR.NO	DESCRIPTION	CHECK /ATTACHED	COMPLIANCE
01.	Copy of Registration of OEM attached.	Yes / No	
02.	Documentary support/proof for 25 or more Bowsers supplied only in last ten years attached.	Yes / No	
03.	Documentary support/proof of Address and contact no. of Govt. / Companies along with work orders to whom Bowsers have been supplied is attached.	Yes / No	
04.	Documentary support/proof of Annual turnover / Balance sheet in last three financial years (not less than 03 Crores) attached.	Yes / No	
05.	Documentary support/proof of Valid NO DUE Sales Tax Clearance certificate attached.	Yes / No	
06.	Integrity Pact signed on Rs.100 stamp paper attached.	Yes / No	
07.	Financial Bid (Price Bid with EMD and AMC charges) and Technical Bid Enclosed in two separate sealed envelope. Attached	Yes / No	
08.	Enclose Tender Fee Rs.5,000/-in the form of DD in favour of "The Director, Directorate of Aviation, Raipur" Payable at Chhattisgarh.	Bank: Amount: DD.No: Date:	
09.	Enclose Earnest Money Deposit @ 3% of total value of 03 nos of Refuellers must be paid in the form of DD in favour of "The Director, Directorate of Aviation, Raipur" Payable at Chhattisgarh.	Bank: DD.No: Date:	
10.	Lead time for the supply of 15 kl Refueller, qty 03 nos should not be exceeded 120 days. If not possible, submit your commitment with Reasons or Conditions.		
11.	Compliance of ***Annexure - I*** (On separate sheet) Attached	Yes / No	
12.	Compliance of ***Annexure – II*** (On separate sheet) Attached	Yes / No	
13.	Compliance of ***Annexure – III*** (On separate sheet) Attached	Yes / No	
14.	Warranty period commitment.		
15.	AMC commitment after warranty period up to five years on yearly charges basis enclosed in Price Bid envelop.	Yes / No	

I / We hereby assured that the information submitted above are correct to the best of my knowledge.

Authorized Seal & Signature

SPECIFICATION for FABRICATION of AIRCRAFT REFUELLER CAP 15 KL

1.0 INTRODUCTION :

- Procurement of chassis of Ashok Leyland make shall be in the scope of the fabricator.
- The specification also complies with the requirements of following Standards applicable:
    - Indian Standard IS 9290
    - Petroleum rules 2002 of the Petroleum Act, 1934 (Part IV: Transport on land by vehicles & Third schedule: Design and construction of Tank Vehicles for transporting Petroleum in Bulk)

  This forms the basis for construction of the complete vehicle and the fabricator should advise of any areas of conflict for resolution by the Purchaser.
- This specification is to be read in conjunction with the requirements given in above standards.

2.0 NOTICE TO TENDERERS:

- Design, fabrication, testing & commissioning of the complete equipment in line with specifications.
- The fabricator is required to submit a General Arrangement Drawing of the vehicle indicating the location of major components, and estimated axle loadings, and the flow circuit diagram indicating the location of all of the nominated control functions including those listed in this specification with' their make and model along with technical bid of the tender.

Approvals to be obtained by the fabricator from Indian Authorities:

Type approval shall be obtained in writing from the Chief Controller of Explosives, Govt. of India, a statutory body, to build the equipment in accordance with requirements laid down in the Third Schedule of The Petroleum Rules 2002.

Dimensions:

The overall width of the motor vehicle, measured-at right angles to the axis of the motor vehicle between perpendicular planes enclosing the extreme points, shall not exceed 2.7 meters. Maximum height from ground level 3.5 meter (empty condition).The overall dimensions of the vehicle are to be kept to a minimum, consistent with capacity and equipment layout but in any case must not exceed the dimensions referred above or as specified in **Appendix** A without the prior agreement of the purchaser.

Stability:

For all aircraft Refuellers; the height of the center of gravity of the load shall not be greater than 95 % of the distance between the outer wall of the supporting tyres measured at the outside of their contact with the ground.

Vehicle protuberances:

All projections from the sides of the vehicle must lie within the general silhouette of the vehicle.

Configuration:

The equipment layout is to be agreed by the Purchaser prior to manufacture. For Refuellers the equipment is to be located either behind the main tank or behind the cab or under the tank belly as given in **Appendix** A.

Performance:

Flow rate:

- The maximum required flow rate is given in **Appendix** A.
- The required Refueller-loading rate is given in **Appendix** A.

Product Tank and fittings:

The tank shall be constructed with single compartment having baffles. Suitable baffles will be provided in the tank so that capacity of each compartment shall not **exceed 5000 ltrs**. The baffle plates will be dished by giving suitable curvature.

A hole with approximate dimension of 500 mm shall be placed midway of each baffle and off centre of the centre line of tank to allow access to every section of tank. The access holes are to be staggered so that no two holes are in line. Access holes to be provided with ring. Access holes (semi circular cut) also to be provided at the top & bottom of each baffle for free movement of air and product.

Tank will be fabricated from MS sheet conforming to specifications. IS 5986, Grade Fe 410 or equivalent. Thickness of the tank to be fabricated shall be in line with CCOE rules. Stiffening of tank will be done externally. No tack welding will be done anywhere inside the tank. No gaps should be left blank which cannot be approached for sandblasting/ epi-coating wherever applicable. All welding on outer surface of tank will also be ground to give a smooth finish for painting. Where possible un-drainable voids could be formed, for example, between baffles and tank wall fillet welds, such spaces are to be fitted with removable plugs at top and bottom to allow purging. Plugs raised above the tank shell top must not present a trip hazard. The floor of the tank to be free from depressions due to fabrication distortion in which free water could lie, and it is essential to ensure that no pockets of liquid can remain in the tank after draining. The sump must be at least 250 mm dia. The sump shall be fitted with a 25 mm shear off sump drain valve, 25 mm stainless steel tubing and spring return **dead man** ball valve. **Manholes** shall be positioned such that they provide a line of sight to the low point sump wherever applicable. The manholes will be covered by means of Dome type hinged covers made from 10 gauge Aluminum /galvanized sheet of suitable design with proper reinforcement at hinges and locking arrangements.

One of the compartment of tank will be provided with 18" dia **fixed manhole** with relevant fittings like Pressure Vacuum Relief operated vent, emergency vent, perforated fill pipe of Aluminum & dip pipe & dipstick assembly. All other compartments to have **EMCO design manholes,** which can be opened and closed very easily. Make of the manholes to be as specified in **Appendix-A.**

Tank Venting:

The vents to be designed and located to prevent any spillage of product when the fully loaded vehicle stands on an incline of 1 in 15, nose up or nose down.

Internal Venting:

Every compartment of tank shall be fitted with an independent vacuum and pressure operated vent with a minimum effective opening of 3 square centimeters; the opening to be covered with two layers of non-corroding metal wire gauge having not less than 11 meshes per centimeter. The vent shall be so arranged as to limit the pressure within the compartment to 0.21 Kg/cm2 and the vacuum to 5 centimeters water gauge.

Emergency venting for fire exposure:
In addition to normal venting required, every compartment of a tank shall be fitted with an emergency venting facility which shall be of the fusible type. Fusible vents shall be activated by elements, which will melt (operate) at a temperature of 93 °C. Vents should be as per the make and design approved by Chief Controller of Explosive (CCOE), Govt. of India or by any other statutory body acceptable to CCOE.

Bottom loading (filling / topping up of refueller):
The vehicle is to be bottom loaded using Jet Automatic Bottom Loading equipment as specified in Appendix-**A.** High-level adjusters or flow shut-off sensors to be accessible without the need to enter the product tank. The loading manifold is to enable loading to take place from either side of the Refueller. Self-sealing aviation tank couplings (three lug adapter assemblies) are to be installed on the operating side of the Refueller. An automatic high level sensing equipment which discharges fuel at high level must be provided with a drain extension pipe carried to the bottom of the tank to prevent free fall of product within the tank. The bottom loading foot valve operating control is to be installed. This is to be located adjacent to the bottom loading connections on the operating side of the vehicle or on the control panel. Where a mechanically operated valve is used, this is to be rod or lever operated and designed to operate the pilot valve only. A stop must be used to prevent inadvertent opening of the main valve. A pre-check test facility shall be provided on the same circuit as the overfill system to provide functional check of foot valve from outside the tank. Deflector plate to be fitted around valve to prevent build up of static charges at high in put flow rates.

Tank discharge (Delivery to aircraft):
Interconnection with the De-fuel Change-over valve such that the discharge foot valve is positively closed whenever "De-Fuel" is selected. A 400 mm diameter deflector plate to be fitted around foot valve to prevent any water droplets present on the tank floor from being drawn into the suction line. The operating lever for valve should incorporate shear off mechanism, which will close the valve automatically in case of fire at a temperature of 93°C.

Road clearance:
Minimum laden ground clearance of vehicle (other than axle components) 350 mm.

Cargo tank overturn protection:
Tank overturn protection shall be provided. Strengthening of the tank will be done wherever openings and fittings are provided to the tank shell by reinforcement.

Cargo tank dipping:
One dipstick assembly consisting of an extruded aluminium dip tube/guide to be fitted to the dip connection.

Additional tank fittings:
A **large diameter Tank contents gauge,** if specified in **Appendix** A, to be fitted to the tank wall clearly visible from the fuelling control panel. The gauge to be calibrated in increments of 2500 litres. Access to the tank top walk platform is to be afforded by a **sloping ladder** fitted to tank with "over the top" handrails.

Re circulation facility:
Re-circulation facility shall be provided for reel hose on operating side of the Refueller. For Refuellers with deck refueling requirement, re-circulation point to be

located on the tank top. The system is to consist of:

i. 75 mm (3 inch) pipe work.
ii. 75 mm (3 inch) lever operated ball valve
iii. One standard aircraft half coupling with tethered cap (three lug adapter assembly)
iv. Pressure gauge test point ¼" BSP plugged, to accept a test gauge on hose reel circulation line only. The re-circulation points are to be piped to avoid free falling of product.

Testing:

The tank shall be tested by hydro static pressure of not less than 0.316 Kg/cm2. The pressure shall be maintained for a period of not less than 1 hour and shall be gauged at the top of the tank.

Fuel Pressure Circuit:

The piping system, and all components upstream of the meter and including the meter are to be designed for working pressure of 150 psi (10 bar) and a hydrostatic test pressure of 240 psi (16 bar). Pipe work & components downstream of the meter to be designed to accept a hydrostatic test of 300 psi (20 bar). Pipe work downstream of each meter valve to incorporate threaded test connections and plugs. Depressurization lines to be fitted around each meter valve and isolating valve where excess pressures can be locked in. These lines are to be fitted with check valves and isolating ball valves.

Product pump:

The pump is to be a self priming centrifugal type suitable for being driven by PTO connected to profiler shaft and meeting the flow performance as specified in **Appendix A .** Pump make shall be provided as specified in **Appendix-A.** A flexible connection (vibration absorber), as specified in **Appendix-A,** shall be installed in the pump suction line to prevent strains or vibrations being transmitted between the pump and the tank.

Power take off unit:

Suitable power take off unit shall be provided by the fabricator through manufacturer of chassis or its authorized dealer. Propeller shaft connecting the PTO to fuel pump to be provided and installed by the fabricator (if the chassis manufacture is not providing along with the chassis). Suitable lever will be provided for PTO unit inside the driver cabin. The operation of this lever will be pneumatic. Arrangement should also be made to lock the lever with PTO in engaged position as well as in disengaged position. When the PTO is in engaged position, an amber light should be activated in the driver cabin as warning not to drive and also brake interlock should be activated.

Filter Monitors:

An approved filter/monitor,(Faudi/Facet/ Velcon) conforming to API-1583 4th edition is to be installed accommodating 20 filter elements .(Refer **Appendix-A).** Then filter vessel end cover is to be fitted with hinge and swing bolts. The vessel end cover and pipe connections to be flanged. The element support spider is to be earthed to the vessel wall. The vessel and all internal components coming in contact with the fuel shall be SS-304.

A vapour separator/air eliminator, as specified in **Appendix-A,** is to be installed.

A differential gauge-to be fitted to measure the pressure drop across the filter. A three-way valve for testing free movement of the piston, to be incorporated and venting line to be routed into the air eliminator line or the dump tank. DRP gauge will be of make specified in **Appendix-A.** 2 Nos. needle valves of stainless steel will be provided on Inlet & Outlet sensing line (3/8" dia) connecting to DRP gauge. A new set of unused filter elements is to be supplied and left in the vehicle cabin Additional set of new filter elements will be supplied as spare with each refueller.

Defuel System four Way Valve:
A method of achieving this is to use a 4-way "fuel/defuel" valve to be installed for providing either flow to aircraft or defuelled flow to the Refueller pump via connection from 4 way valve to suction line of pump. Defuel valve will be as specified in **Appendix-A.**

Bulk Meters:
The number of meters required to be used is given in **Appendix A** and their make in **Appendix B.** Each meter to be rated for the maximum flow rate for the circuit it measures. Register to be provided with a resettable counter and a large numerals no resettable totalizer **(refer to Appendix A).** The meter must be installed such that it may be read and reset from the operating position.

The electronic meters shall have provision for the following:

- Quantity delivered in liters and reset it to zero before next delivery
- 6 digit totalizer reading
- Rate of Flow
- Meter calibration.

The meters should have an accuracy of ± 0.1% at all rates of flow between 10% and 100% of maximum rated flow. Flow control through the meter system to be provided by means of non-lubricated ball valves, lever operated and mounted downstream of the meters. One **butterfly valve** shall be provided on suction pipeline of pump for ease of maintenance. **Butterfly valve** shall be provided for controlling flow through each hose reel.

Venturi:
Venturi shall be provided to control pressure and compensate the pressure loss (simulate) of the piping between the venturi and the under wing nozzle. Venturi to be provided with an adjustable mixing valve to allow matching of compensation for a setting of 50 psi at under wing nozzle end. 1 No. **Shuttle check valve** will be provided between the line connecting venturi and the pressure control valve.

The maker of venturi is as specified in **Appendix-A.**

Hose Reels and Product Hoses:

Product Hoses:
As mentioned in **Appendix A,** the products hoses have to be provided that are to be of approved aviation type (API 1529, Grade 2, and Type C). Sizes, lengths and make are to be as specified in **Appendix-A.** Hoses are to be connected using approved couplings.

Hose testing points:
Suitable fittings with isolation valves to be provided near to all hoses for carrying out in situ hose pressure testing without removing the hoses.

Hose reels:
Hose reels to be of volute type single wrap made of lightweight robust construction. The hose reels are to be rewound by electric motors refer to **Appendix A,** via heavy duty roller chain drives. Provision to be made for adjustment of chain tension.

Hose End Equipment:

Under wing refuelling nozzle

To be provided of make as specified in **Appendix-A.**

Over wing refuelling nozzle

A non-selective spout of 63 mm as specified in **Appendix A,** is also to be provided suitable to fit with delivery coupling at one end and the other end should have conical nozzle shape having dia of 63mm as per standard shape for Jet A-1.

Pipe fittings:

All piping and pipe fittings in contact with product to be of Stainless steel, minimum specification ANSI code schedule 10s for pipe and fittings, and schedule 40S for screwed fittings and pipe/fittings below 50NB materials grade 304 or equivalent. Stainless steel tubing and compression fittings shall be used for piping 25NB and below. All pipe joints to be flanged to ANSI standard B 16.5, pressure rated to the system. Nuts and bolts are to be self locking or fitted with heavy duty spring washers. Layout should be as simple as possible with the minimum possible number of pipe bends and junctions.

Pneumatic systems:

Brake interlock:

Electric solenoid operated brake interlock as specified in **Appendix** A.

A brake-interlock system amber warning light, 50 mm dia. to be located in the cab in a prominent position on the dashboard visible also from outside of the vehicle. The light to flash to indicate that the system is active apart from amber light at gauge panel. All interlock related equipment shall be mounted in suitable housing cabinets that are easily accessible at all times. It is preferred that such equipment is not mounted behind the vehicle dashboard. All electrically operated system is to be intrinsically safe and should incorporate sealed proximity switches with a wide adjustment for operating tolerance for Deck hose couplers, Reel hose couplers, PTO, DMC and Loading points. The electric operating controls are to interface with a pneumatic circuit in the parking brake system. A system panel to be provided to indicate the status of all interlocks and provide fault indication and mounted in the gauge panel. Each circuit board and panel to be provided with a single quick connect plug to allow easy interchange. An air operated, all pneumatic system, is to incorporate an auxiliary pneumatic system. installed on the tractor which will obtain its supply of compressed air from the chassis brake system compressor. The air provided is to actuate the interlock and other safety systems described in this specification. The system to consist of a 10 liters air reservoir fitted with an automatic water drain valve, pressure protection valve and strainer/lubricator. Auxiliary air is received via the pressure protection valve which isolates the auxiliary system at main air pressures of less than 85 psi. A pneumatic interlock override switch shall be installed within easy reach of the driving position. The switch shall have provision for wire/lead sealing in the non over rider position. Activating the override shall cause a large (50 mm dia.) red light on the dashboard (visible also from outside the cab) to flash.

Bonding:

Hand rewind static reel fitted with 30 meters of kink resistant PVC coated multi strand wire made of Stainless Steel with a heavy-duty clip be provided. Maximum resistance from end to end should not be more than 5 ohms.

Air Tanks:

Air tanks, when used, shall be fitted with cable operated drain lanyards. An air dryer is to be fitted to the pneumatic system.

Safety Equipment Fire extinguishers:

Two open topped scabbards to house 10 kg (20 lbs) dry powder fire extinguishers

are to be installed, one on each side of the vehicle. A 1 Kg dry powder extinguisher and mounting bracket is to be installed in the cabin of the vehicle.

Engine exhaust system:

Exhaust pipe of engine to be routed so that it is on the passenger side of the vehicle.
Along with a Spark arrestor to be fitted. This should be of approved make by Chief Controller of Explosives. Govt. of India or of any other statutory body acceptable to CCOE. Fire screen will be provided at the back side of the cabin.

Fuel tank to be relocated on passenger side of chassis. All flexible fuel lines in the engine fuel system must be armour braided externally.

Vehicle electrical system:

All electrical wiring to meet CCOE regulations.

Batteries:

The battery isolation switch must be fitted. The batteries must be easily accessible for maintenance. This must also be considered once the unit has been completed. The battery box is to have a minimum insulation thickness of 4 mm. Earth leakage test continual display to be provided for systems of double pole wired. All additional circuits added by the fabricator & controlled by switches are to be located in the cab & adequately protected by fuses, located in a fuse box & clearly identified.

Vehicle lights:

Refueller operating lights, tail light circuit are to be connected into the vehicle side and are also to be provided with an adequately labeled isolation switch mounted in the cab. Four red warning lights are to be installed at the highest points on the four corners of the tank. They shall be wired into the vehicle side/ tail light circuit.

Miscellaneous equipment and requirements:

Single mud wings in fire retardant plastic or aluminum are to be supplied and fitted over the rear wheels of the tractor and trailer. All dial pressure gauges used in the dispensing and hydraulic system to be glycerin filled, fitted with snubbers to reduce needle oscillations and be dual marked in psi and kg /cm2. All seals, joints, 0 rings, washers etc. which come into contact with the product carried by the vehicle are to be of Buna-N or Viton A material or agreed with the Purchaser as compatible with Aviation fuel (Jet Al). Plastic pipes are not to be used in any product line. Corrosion due to the contact of similar metals between the chassis the sub-frame or any other equipment is to be prevented by painting the surfaces before assembly with a Zinc rich based primer. All units and equipment to be positioned to give unhampered access for all routine servicing and maintenance of the complete vehicle. All major items of fuelling equipment are to be easily removed.

Electric, pneumatic and hydraulic equipment and control devices are to be kept to a minimum. Provision must be made for manual operation of any control if it is normally servo operated. All pneumatic tubing used in the pneumatic circuits must be shielded in split conduit, colour coded ultra violet resistant cross referenced to the circuit diagram and impervious to direct sunlight. All valves used for handling product must have stainless steel internals unless otherwise specified. 33.15 Decals to be provided for the diesel and hydraulic tank indicating the product, grade and volume of each tank. An additional fluorescent light to be provided in the cabin and activated by the door opening, with a separate isolation switch inside.

Painting and Lettering:

The complete vehicle to be painted in two pack polyurethane materials.

Guarantee and Spares:
The fuelling equipment and all bought in components are to be guaranteed by the Fabricator for 12 months from the date of actual delivery at Chhattisgarh.

RTO Formalities:
All the formalities in connection with the RTO shall be completed by the fabricator.
After the Refueller is ready, the fabricator will complete the temporary registration and road permit formalities with the local regional transport authorities on our behalf and will also obtain insurance at his own cost for the vehicle for the destination advised by us. The transportation of the Refueller to the final destination will be arranged by the fabricator ex their works. Payment for any statutory levies like octroi or toll tax, if, applicable enroute for transportation of Refueller shall be made by the fabricator and will be reimbursed at actual on submission of proof of payment. However, the permanent registration and insurance shall be done by us.

Appendix - A:

List of Specified items for Refuellers:

- Sump Valves Carter: USA/Whittaker
- Manhole covers : Emco type Standard design Indian make
- 4" Jet automatic bottom loading valve : Carter, USA/Whittaker, USA
- 3 Lug adapters: Carter, USA/Whittaker
- 250mm Tank Content gauge (10"): Bayham,
- Main Product pump: Gorman Rupp,
- Flexible Connection: Elaflex,Germany
- Filter Monitor Vessel (Stainless Steel) : Faudi/Facet/Velcon
- Air Eliminator Amstrong, USA Armstrong 11 AV
- Sho-Flo Indicator: OPW,USA
- Differential Pressure Gauge :Gammon, USA
- Inline Pressure Control Valve: Whittaker Controls, USA F 370
- Fuel – Defuel Valve :Gorman Rupp, USA
- Bulk Meter Flow Meter: ISOIL Single Capsule Electronic Register Display of Vega T
- Venturi: 3" – 1 Nos.
- Reel Hose Elaflex, Germany API 1529 2"x 60' : 2 number Grade 2, Type C with Neon Yellow Band
- Deck Hose Elaflex, Germany API 1529 2 ½" x 15' : 2no. Grade 2, Type C with Neon Yellow Band
- Spring return valves: Apollo/equivalent
- Over wing nozzle OPW 1 ½" size 295 SAJ-0200

APPENDIX - B
The chassis suitable for fabrication of 15 KL Capacity Fixed body Aircraft Refueller shall be in the scope of the fabricator. The Chassis should be with factory built-in-cabin, meeting BS-III certification. The make of the Chassis should be Ashok Leyland, 2516 H 3/T3,6/2.
Wheel base 5029 mm / 198".

SPECIFICATION for FABRICATION of 24KL - ATF - Tanker

1.0 INTRODUCTION:

- Procurement of chassis of Ashok Leyland / TATA make shall be in the scope of the fabricator.
- The specification also complies with the requirements of following Standards applicable:
    - Indian Standard IS 9290
    - Petroleum rules 2002 of the Petroleum Act, 1934 (Part IV: Transport on land by vehicles & Third schedule: Design and construction of Tank Vehicles for transporting Petroleum in Bulk)

2.0 NOTICE TO TENDERERS:

- Design, fabrication, testing & commissioning of the complete equipment in line with specifications.
- The fabricator is required to submit a General Arrangement Drawing of the vehicle indicating the location of major components, and estimated axle loadings, and the flow circuit diagram indicating the location of all of the nominated control functions including those listed in this specification with' their make and model along with technical bid of the tender.

Approvals to be obtained by the fabricator from Indian Authorities:

Type approval shall be obtained in writing from the Chief Controller of Explosives, Govt. of India, a statutory body, to build the equipment in accordance with requirements laid down in the Third Schedule of The Petroleum Rules 2002.

Dimensions:

The overall width of the motor vehicle, measured-at right angles to the axis of the motor vehicle between perpendicular planes enclosing the extreme points, shall not exceed 2.7 meters. Maximum height from ground level 3.5 meter (empty condition).The overall dimensions of the vehicle are to be kept to a minimum, consistent with capacity and equipment layout.

Stability:

For all tankers; the height of the center of gravity of the load shall not be greater than 95 % of the distance between the outer wall of the supporting tyres measured at the outside of their contact with the ground.

Vehicle protuberances:

All projections from the sides of the vehicle must lie within the general silhouette of the vehicle.

Product Tank and Fittings:

The tank shall be constructed with 5 compartment having baffles. Suitable baffles will be provided in the tank so that capacity of each compartment shall not **exceed 5000 ltrs**. The baffle plates will be dished by giving suitable curvature.

Tank will be fabricated from MS sheet conforming to specifications. IS 5986, Grade Fe 410 or equivalent. Thickness of the tank to be fabricated shall be in line with CCOE rules. Stiffening of tank will be done externally. No tack welding will be done anywhere inside the tank. No gaps should be left blank which cannot be approached for sandblasting/ epi-coating wherever applicable. All welding on outer surface of tank will also be ground to give a smooth finish for painting. Where possible un-drainable voids could be formed, for example, between baffles and tank wall fillet welds, such spaces are to be fitted with removable plugs at top and bottom to allow purging. Plugs raised above the tank shell top must not present a trip hazard. The floor of the tank to be free from depressions due to fabrication distortion in which free water could lie, and it is essential to ensure that no pockets of liquid can remain in the tank after draining. There shall be five individual compartments without any direct access internally. Each compartment shall have one manhole each which will be covered by means of Dome type hinged covers made from 10 gauge Aluminum /galvanized sheet of suitable design with proper reinforcement at hinges and locking arrangements. 18" dia fixed manholes shall have relevant fittings like Pressure Vacuum Relief operated vent, emergency vent,perforated fill pipe of Aluminum & dip pipe & dipstick assembly.

Tank Venting:

The vents to be designed and located to prevent any spillage of product when the fully loaded vehicle stands on an incline of 1 in 15, nose up or nose down.

Internal Venting:

Every compartment of tank shall be fitted with an independent vacuum and pressure operated vent with a minimum effective opening of 3 square centimeters; the opening to be covered with two layers of non-corroding metal wire gauge having not less than 11 meshes per centimeter. The vent shall be so arranged as to limit the pressure within the compartment to 0.21 Kg/cm2 and the vacuum to 5 centimeters water gauge.

Emergency venting for fire exposure:

In addition to normal venting required, every compartment of a tank shall be fitted with an emergency venting facility which shall be of the fusible type. Fusible vents shall be activated by elements, which will melt (operate) at a temperature of 93 °C. Vents should be as per the make and design approved by Chief Controller of Explosive (CCOE), Govt. of India or by any other statutory body acceptable to CCOE.

Tank Discharge:

MS Emergency shut off valve duly approved by CCOE / PESO shall be fitted on each compartment. These valves shall be connected directly to individual pipelines. The pipelines are in SS 304.

These pipelines are finally fitted with Gate valves followed by a single manifold. The manifold shall be either fitted with one single opening (threaded or flanged).

Road Clearance:

Minimum laden ground clearance of vehicle (other than axle components) 350 mm.

Cargo Tank Overturn Protection:

Tank overturn protection shall be provided. Strengthening of the tank will be done wherever openings and fittings are provided to the tank shell by reinforcement.

Cargo Tank Dipping:

One dipstick assembly consisting of extruded aluminium dip tube /guide to be fitted to the dip connection.

APPENDIX - A

The chassis suitable for fabrication of 24 KL Capacity Fixed body ATF Fuel Tanker shall be in the scope of the fabricator. The Chassis should be with factory built-in-cabin, meeting BS-III certification. The make of the Chassis should be Ashok Leyland, 3116 H3.Wheel base 5200 mm.

---- THE END---

Annexure

PRE-CONTRACT INTEGRITY PACT

1. GENERAL

1.1. This pre-bid contract Agreement (herein after called the Integrity Pact) is made on.....day of the month.....20....., between, the Government of Chhattisgarh acting through Shri.....(Designation of the officer, Department) Government of Chhattisgarh (hereinafter called the "BUYER", which expression shall mean and include, unless the context otherwise requires, his successors in the office and assigns) and the First Party, proposes to procure (name of the Stores/Equipment/Work/Service) and M/s.....represented by Shri.....Chief Executive Officer (hereinafter called the "BIDDER/Seller", which expression shall mean and include, unless the context otherwise requires, his successors an permitted assigns) and the Second Party, is willing to offer/ has offered.

1.2. WHEREAS the BIDDER is a Private Company/Public Company/ Government Undertaking/ Partnership/Registered Export Agency, constituted in accordance with the relevant law in the matter and the BUYER is a Ministry/Department of the Government, performing its function on behalf of the Government of Chhattisgarh.

2. OBJECTIVES

NOW, THEREFORE, the BUYER and the BIDDER agree to enter into this pre-contract agreement, hereinafter referred to as Integrity Pact, to avoid all forms of corruption by following a system that is fair, transparent and free from any influence/prejudiced dealings prior to, during and subsequent to the Contract to be entered into with a view to:-

2.1. Enabling the BUYER to obtain the desired Stores/Equipment/Work/Service at a competitive price in conformity with the defined specifications by avoiding the high cost and the distortionary impact of corruption on public procurement, and

2.2. Enabling BIDDERs to abstain from bribing or indulging in any corrupt practices in order to secure the contract by providing assurance to them that their competitors will also abstain from bribing any corrupt practices and the BUYER will commit to prevent corruption, in any form, by its official by following transparent procedures.

3. COMMITMENTS OF THE BUYER

The BUYER commits itself to the following:-

3.1. The BUYER undertakes that no official of the BUYER, connected directly or indirectly with the contract, will demand, take promise for or accept, directly or through intermediaries, any bribe, consideration, gift, reward, favour or any material or immaterial benefit or any other advantage from the BIDDER, either for themselves or for any person, organization or third party related to the contract in exchange for an advantage in the bidding process, bid evaluation, contracting or implementation process related to the contract.

3.2. The BUYER will, during the pre-contract stage, treat BIDDERs alike, and will provide to all BIDDERs the same information and will not provide any such information to any particular BIDDER which could afford an advantage to that particular BIDDER in comparison to the other BIDDERs.

3.3. All the officials of the BUYER will report the appropriate Government office any attempted or completed breaches of the above commitments as well as any substantial suspicion of such a breach.

In case any such preceding misconduct on the part of such official(s) is reported by the BIDDER to the BUYER with the full and verifiable facts and the same *prima facie* found to be correct by the BUYER, necessary disciplinary proceedings, or any other action as deemed fit, including criminal proceedings may be initiated by the BUYER and such a person shall be debarred from further dealings related to the contract process. In such a case while an enquiry is being conducted by the BUYER the proceedings under the contract would not be stalled.

4. COMMITMENTS OF BIDDERS

The BIDDER commits itself to take all measures necessary to prevent corrupt practices, unfair means an illegal activities during any stage of its bid or during any pre-contract or

post-contract stage in order to secure the contract or in furtherance to secure it and in particular commit itself to the following:-

4.1. The BIDDER will not offer, directly or through intermediaries, any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage or inducement to any official of the BUYER, connected directly or indirectly with the biding process, or to any person, organization or third party related to the contract in exchange for any advantage in the bidding, evaluation, contracting and implementation of the contract.

4.2. The BIDDER further undertakes that it has not given, offered or promised to give, directly or indirectly any bribe, gift, consideration, reward, favour, any material or immaterial benefit or other advantage, commission, fees, brokerage, or inducement to any official of the BUYER or otherwise in procuring the Contract of forbearing to do or having done any act in relation to the obtaining or execution of the contract or any other contract with the Government for showing or forbearing to show favour or disfavour to any person in relation to the contract or any other contract with the Government.

4.3. The BIDDER further confirms and declares to the BUYER that the BIDDER in the original Manufacture/Integrator/Authorized government sponsored export entity of the stores and has not engaged any individual or firm or company whether Indian or foreign to intercede, facilitate or in any way to recommend to the BUYER or any of its functionaries, whether officially or unofficially to the award of the contract to the BIDDER, nor has any amount been paid, promised or intended to be paid to any such individual, firm or company in respect of any such intercession, facilitation or recommendation.

4.4. The BIDDER, either while presenting the bid or during pre-contract negotiations or before signing the contract, shall disclose any payment he has made, is committed to or intends to make to officials of the BUYER or their family members, agents, brokers or any other intermediaries in connection with the contract and the details of services agreed upon for such payments.

4.5. The BIDDER will not collude with other parties interested in the contract to impair the transparency, fairness and progress of the bidding process, bid evaluation, contracting and implementation of the contract.

4.6. The BIDDER will not accept any advantage in exchange for any corrupt practice, unfair means and illegal activities.

4.7. The BIDDER shall not use improperly, for purpose of competition or personal gain, or pass on to others, any information provided by the BUYER as part of the business relationship, regarding plans, technical proposal and business details, including information contained in any electronic data carrier. The BIDDER also undertakes to exercise due and adequate care lest any such information is divulged.

4.8. The BIDDER commits to refrain from giving any complaint directly or through any other manner without supporting it with full and verifiable facts.

4.9. The BIDDER shall not instigate or cause to instigate any third person to commit any of the acts mentioned above.

5. PREVIOUS TRANSGRESSION

5.1. The BIDDER declares that no previous transgression occurred in the last three years immediately before signing of this Integrity Pact with any other company in any country in respect of any corrupt practices envisaged hereunder or with any Public Sector Enterprise in India or any Government Department in India that could justify BIDDER's exclusion from the tender process.

5.2. If the BIDDER makes incorrect statement on this subject, BIDDER can be disqualified from the tender process or the contract, if already awarded, can be terminated for such reason.

6. EARNEST MONEY (SECURITY DEPOSIT)

6.1. Every BIDDER while submitting commercial bid, shall deposit an amount as specified in RFP as Earnest Money/Security Deposit, with the BUYER through any of the following instruments:

(i) Bank Draft or a Pay Order in favour of.....

(ii) A confirmed guarantee by an Indian Nationalised Bank, promising payment of the guaranteed sum to the..... (BUYER).....on demand within three working days without any demur whatsoever and without seeking any reasons whatsoever. The demand for payment by the BUYER shall be treated as conclusive proof of payment.

(iii)Any other mode or through any other instrument (to be specified in the RFP).

6.2. The Earnest Money/Security Deposit shall be valid upto a period of five years or the complete conclusion of the contractual obligations to the complete satisfaction of both the BIDDER and BUYER, including warranty period, whichever is later.

6.3. In the case of successful BIDDER a clause would also be incorporated in the Article pertaining to Performance Bond in the Purchase Contract that the provisions of Sanctions for violation shall be applicable for forfeiture of Performance Bond in case of a decision by the BUYER to forfeit the same without assigning any reason for imposing sanction for violation of this Pact.

6.4. No interest shall be payable by the BUYER to the BIDDER on Earnest Money/Security Deposit for the period of its currency.

7. SANCTIONS FOR VIOLATIONS

7.1. Any breach of the aforesaid provisions by the BIDDER or any one employed by it or acting on its behalf (whether with or without the knowledge of the BIDDER) shall entitle the BUYER to take all or any one of the following actions, wherever required:-

(i) To immediately call off the pre contract negotiations without assigning any reason or giving any compensation to the BIDDER. However, the proceedings with the other BIDDER(s) would continue.

(ii) To forfeit fully or partially the Earnest Money Deposit (in pre-contract stage) and/or Security Deposit/Performance Bond (after the contract is signed), as decided by the BUYER and the BUYER shall not be required to assign any reason therefore.

(iii)To immediately cancel the contract, if already signed, without giving any compensation to the BIDDER.

(iv)To recover all sums already paid by the BUYER, and in case of the Indian BIDDER with interest thereon at 2% higher than the prevailing Prime Lending Rate while in case of a BIDDER from a country other than India with Interest thereon at 2% higher than the LIBOR. If any outstanding payment is due to the BIDDER from the BUYER in connection with any other contract such outstanding payment could also be utilized to recover the aforesaid sum and interest.

(v) To encash the advance bank guarantee and performance bond/warranty bond, if furnished by the BIDDER, in order to recover the payments, already made by the BUYER, along with interest.

(vi) To cancel all or any other contracts with the BIDDER and the BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such cancellation/rescission and the BUYER shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

(vii) To debar the BIDDER from participating in future bidding processes of the Government of Chhattisgarh for a minimum period of five years, which may be further extended at the discretion of the BUYER.

(viii) To recover all sums paid in violation of this Pact by BIDDER(s) to any middlemen or agent or broken with a view to securing the contract.

(ix) In cases where irrevocable Letters of Credit have been received in respect of any contract signed by the BUYER with the BIDDER, the same shall not be opened.

(x) If the BIDDER or any employee of the BIDDER or any person acting on behalf of the BIDDER, either directly or indirectly, is closely related to any of the officers of the BUYER, or alternatively, if any close relative of an officer of the BUYER has financial interest/stake in the BIDDER's firm, the same shall be disclosed by the BIDDER at the time of filling of tender. Any failure to disclose the interest involved shall entitle the BUYER to rescind the contract without payment of any compensation to the BIDDER.

The term 'close relative' for this purpose would mean spouse whether residing with the Government servant or not, but not include a spouse separated from the Government servant by a decree or order of a competent court; son or daughter or step son or step daughter and wholly dependent upon Government servant, but does not include a child or step child who is no longer in any way dependent upon the Government servant or of whose custody the Government servant has been deprived of by or under any law; any other person related, whether by blood or marriage, to the Government servant or to the Government servant's wife or husband and wholly dependant upon Government servant.

(xi) The BIDDER shall not lend to or borrow any money from or enter into any monetary dealings or transactions, directly or indirectly, with any employee of the BUYER, and if he does so, the BUYER shall be entitled forthwith to rescind the contract and all other contracts with the BIDDER. The BIDDER shall be liable to pay compensation for any loss or damage to the BUYER resulting from such rescission and the BUYER

shall be entitled to deduct the amount so payable from the money(s) due to the BIDDER.

7.2. The decision of the BUYER to the effect that a breach of the provisions of this pact has been committed by the BIDDER shall be final and conclusive on the BIDDER. However, the BIDDER can approach the Monitor(s) appointed for the purposes of this Pact.

8. FALL CLAUSE

8.1. The BIDDER undertakes that if has not supplied/is not supplying similar product/systems or subsystems at a price lower than that offered in the present bid in respect of any other Department of the Government of Chhattisgarh or PSU and if it is found at any stage that similar product/systems or sub systems was supplied by the BIDDER to any other Department of the Government of Chhattisgarh or a PSU at a lower price, then that very price, with due allowance for elapsed time, will be applicable to the present case and the difference in the cost would be refunded by the BIDDER to the BUYER, if the contract has already been concluded.

9. INDEPENDENT MONITORS

9.1. The BUYER will appoint Independent Monitors (hereinafter referred to as Monitors) for this Pact.

9.2. The task of the Monitors shall be to review independently and objectively, whether and to what extent the parties comply with the obligations under this Pact.

9.3. The Monitors shall not be subject to instructions by the representatives of the parties and perform their functions neutrally and independently.

9.4. Both the parties accept that the Monitors have the right to access all the documents relating to the project/procurement, including minutes of meetings. The Monitor shall be under contractual obligation to treat the information and documents of the BIDDER/Subcontractor(s) with confidentiality.

9.5. As soon as the Monitor notices, or has reason to believe, a violation of this Pact, he will so inform the Authority designated by the BUYER.

9.6. The Monitor will submit a written report to the designated Authority of BUYER/Secretary in the Department/within 8 to 10 weeks from the date of reference or intimation to him by the BUYER/BIDDER and, should the occasion arise, submit proposals for correcting problematic situations

10. FACILITATION OF INVESTIGATION

In case of any allegation of violation of any provisions of this Pact or payment of commission, the BUYER or its agencies shall be entitled to examine all the documents including the Books of Accounts of the BIDDER and the BIDDER shall provide necessary information of the relevant documents and shall extend all possible help for the purpose of such examination.

11. LAW AND PLACE OF JURISDICTION

This Pact is subject to Indian Law, the place of performance and jurisdiction shall be the seat of the BUYER.

12. OTHER LEGAL ACTIONS

The actions stipulated in this Integrity Pact are without prejudice to any other legal action that may follow in accordance with the provisions of the any other law in force relating to any civil or criminal proceedings.

13. VALIDITY

13.1. The validity of this Integrity Pact shall be from the date of its signing and extend up to 5 years or the complete execution of the contract to the satisfaction of both the BUYER and the BIDDER/Seller whichever is later. In case BIDDER is unsuccessful, this Integrity Pact shall expire after six months from the date of the signing of the contract.

13.2. If one or several provisions of this Pact turn out to be invalid; the remainder of this Pact shall remain valid. In such case, the parties will strive to come to an agreement to their original intentions.

14. The parties hereby sign this Integrity Pact at..... on.....

BUYER BIDDER

Name of the Officer

Designation

Department/ PSU

CHIEF EXECUTTIVE OFFICER

Witness

1).....
.....

2) .....
.....

Witness

1) .....
.....

2) .....
.....

